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OCTOBER 7.

The President, Dr. RUSCHENBERGER, in the chair.

Thirty-three members present.

*Law of Seed Germination in Swamp Plants.*—Referring to a few brief remarks of Mr. Aubrey H. Smith, on a former occasion, in regard to the naturalization of *Taxodium distichum* on comparatively dry ground in the Northern States, Mr. THOMAS MEEHAN said that it was an error to suppose that nature placed trees in places the best suited to their growth. Almost all of our swamp trees grew much better when they could get into dryer places, if in ordinary good land. He referred among others to *Magnolia glauca*, *Acer rubrum*, *Celtis occidentalis*, *Ilex opaca*, *Cupressus chamaecyparis*, *Cephalanthus occidentalis*, *Salix babylonica*, especially as, within his own repeated observations, growing better out of swamps than in them. Why it was that they grew in swamps was no enigma to those in the habit of raising forest trees from seed. It was found that seeds of these trees would only germinate in damp places, and, of course, in a state of nature the tree had to remain in the place where the seed germinated.

He thought the principle taught that plants required water to grow well was true only in so far as a humid condition of the soil was concerned. Plants, as a general thing, though they were of the class known especially as water plants, preferred to grow out of the water, except in those which grew almost entirely beneath the surface. He had found such plants as *Polygonum amphibium* and some of the water-loving *Ranunculi*, grow much more luxuriously in the terrestrial than in the aquatic state. As was well known, the *Taxodium distichum* in the southern swamps sent up "knees" from various points as the roots extended, often as large as old-fashioned bee-hives, and several feet above the surface. He had observed that not only were the cypress trees at least as large and luxuriant when growing in good, rather dry ground; but the tendency to throw up these knees was in a measure lost. They were generally small, but often wholly wanting. With the general facts before us of the antipathy of swamp plants to their watery fate, he thought one might be safe in concluding that these root excrescences were the result of an effort of the plant to counteract the law which, against its own desires, to speak metaphorically, had found itself obliged by the necessities of its law of seed germination to be a denizen of a swamp.

Mr. AUBREY H. SMITH said: In connection with the observations of Mr. Meehan, I think it worth recording that a few years ago I

collected some plants of *Talinum teretifolium* Pursh, on the serpentine rocks of Chester County, near Westchester, and transferred them to the small garden in the rear of my house in this city. The place chosen for them was close to the hydrant, where the very rich soil was constantly in a humid condition. The plants thrive greatly, producing flowers and perfect fruit in abundance, and extending their tuber-like roots on all sides. In the early spring, observing these roots half-exposed on the surface of the ground, I pressed them down with my finger and covered them with earth. The plants continued to thrive and multiply in this situation for several years, forming a thick mat of considerable extent, with no further care than the occasional covering of their roots in the spring. Subsequently they were superseded by *Helonias bullata*, for which their site was the best in my possession. This, however, bloomed but feebly and died in the early heat of the next summer.

When we consider that *Talinum teretifolium* grows only on dry rocks and, in Pennsylvania, is confined to the ledges and fissures of the serpentine, seeking, as it were by preference, the poorest and driest soils, it affords a striking illustration of the truth of Mr. Meehan's remark that nature does not always put plants in places most suitable to their growth. What condition essential to the perpetuation of this plant exists in the arid serpentine, I am not able to state. It may concern the germination of its seed or the protection of its fleshy roots. It certainly does not govern its nutrition and fructification.

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OCTOBER 14.

The President, Dr. RUSCHENBERGER, in the chair.

Twenty-seven members present.

*On Distoma hepaticum.*—Prof. LEIDY stated that he had received a letter from Prof. Gross, inclosing one from Dr. J. G. Kerr, of Canton, China, asking information in regard to a worm accompanying the letter. Dr. Kerr observes that the worm was vomited by a Chinese boy, aged fifteen years, and was brought to him an hour after its expulsion, when it was still alive. It had the appearance of a leech, was red in color, about an inch and a half long and three-fourths of an inch where widest. Dr. Kerr also states that a girl, of four years, of English parents, living in Canton, passed from the bowels at one time nine of these worms. With these exceptions, Dr. Kerr had not met with any one who had ever seen or heard of anything of the kind.

Prof. Leidy exhibited the specimen and expressed the opinion that the worm was a Liver-fluke, *Distoma hepaticum*, a rare parasite in the human subject, though common enough in cattle, espe-